

1  
2 ABSTRACT  
3

4 A fiber to chip coupling connecting an optical fiber to an integrated circuit.

5 A section of fiber is laid on top of the surface of the chip, where the end of  
6 the fiber has been cut at an angle to form an angled tip. The angled tip has a  
7 flat surface which reflects light down to a waveguide grating coupler  
8 disposed on the integrated circuit. Light is reflected off the reflective  
9 surface of the angled tip by total internal reflection. The waveguide grating  
10 coupler is designed to accept the slightly diverging light beam from the  
11 reflective surface of the angled tip of the fiber. Light can also propagate  
12 through the fiber to chip coupler in the opposite direction, up from the  
13 substrate through the waveguide grating and into an optical fiber after  
14 bouncing off the reflective surface of the angled tip.